

CLAIMS

We claim:

1. A packaged antimicrobial elastomeric article comprising an elastomeric article treated on the surface with at least one antimicrobial agent, and a package, and a means for reducing the relative humidity in the vicinity of the elastomeric article to less than the ambient relative humidity.
2. The packaged article of claim 1, wherein the article is a glove, and further wherein the at least one antimicrobial agent comprises chlorhexidine gluconate and at least one quaternary ammonium halide selected from benzalkonium chloride and/or cetyl pyridinium chloride.
3. The package of claim 2, wherein the means for reducing the relative humidity in the vicinity of the glove is a desiccant and a sealed moisture-resistant barrier or metal foil pouch containing the desiccant.
4. The package of claim 2, wherein the relative humidity in the vicinity of the glove is less than about 40% relative humidity.
5. The package of claim 2, wherein the surface of the glove is essentially free of powder.
6. The package of claim 2, wherein the surface of the glove is essentially free of starch.

7. A method of producing an antimicrobial elastomeric article comprising:

forming an elastomeric article, applying at least one antimicrobial agent to the surface of the elastomeric article, and packaging the elastomeric article in a means for reducing the relative humidity in the vicinity of the elastomeric article to less than the ambient relative humidity.

8. The method of claim 7, wherein the elastomeric article is a glove.

9. The method of claim 8, wherein the at least one antimicrobial agent comprises at least one water-soluble chlorhexidine salt and at least one water-soluble quaternary ammonium halide.

10. The method of claim 9, wherein the water-soluble chlorhexidine salt is chlorhexidine gluconate.

11. The method of claim 9, wherein the water-soluble quaternary ammonium halide is benzalkonium chloride and/or cetyl pyridinium chloride.

12. The method of claim 10, wherein the antimicrobial agent is applied to the surface of the glove by spraying or dipping.

13. The method of claim 8, comprising packaging the glove with a means for reducing

the relative humidity in the vicinity of the glove to less than about 30% relative humidity.

14. The method of claim 13, wherein the means for reducing the relative humidity in the vicinity of the glove to less than about 30% is a moisture-resistant barrier or metal foil pouch with a desiccant.

15. The method of claim 12, wherein the antimicrobial agent is applied to both the outside surface and the inside surface of the glove.

16. The method of claim 12, wherein the antimicrobial agent is applied to the outside surface of the glove.

17. The method of claim 12, wherein the antimicrobial agent is applied to the inside surface of the glove.

18. The method of claim 8, wherein the antimicrobial activity of the glove after storage for 45 days exhibits at least 1 log₁₀ reduction of the initial number of microorganisms that come into contact with the treated glove surface in one minute of contact.

19. The method of claim 8, wherein the gloves are essentially free of powder.

20. The method of claim 8, wherein the gloves are essentially free of starch.

21. A method of preserving and/or prolonging the antimicrobial efficacy of an elastomeric article, said method comprising:

obtaining an elastomeric article;

applying at least one antimicrobial agent to a surface of the elastomeric article;

and packaging the elastomeric article with a means for reducing the relative humidity in the vicinity of the elastomeric article within the package to less than the ambient relative humidity,

wherein by antimicrobial efficacy is meant at least 1 log₁₀ reduction in the initial number of microorganisms in a sample that come into contact with the treated elastomeric article surface due to one minute of contact with said elastomeric article.

22. The method according to claim 21, wherein the elastomeric article is a glove.

23. The method according to claim 22, wherein the at least one antimicrobial agent comprises at least one chlorhexidine salt and at least one quaternary ammonium halide.

24. The method according to claim 22, wherein the glove is essentially free of starch and/or powder.

25. The method according to claim 22, comprising packaging the glove with a means for reducing the relative humidity in the vicinity of the glove to less than about 30% relative humidity.

26. The method according to claim 22, wherein the microorganisms comprise

Staphylococcus aureus and/or *Pseudomonas aeruginosa*.

27. An antimicrobial elastomeric article comprising an elastomeric article coated with at least one antimicrobial agent wherein the antimicrobial elastomeric article is packaged by a process that extends the antimicrobial activity of the elastomeric article compared to an unpackaged elastomeric article comprising:

forming an elastomeric article, applying at least one chlorhexidine salt and at least one quaternary ammonium halide to a surface of the elastomeric article, and packaging the elastomeric article in a means for reducing the relative humidity in the vicinity of the elastomeric article to less than the ambient relative humidity,

wherein the packaged elastomeric article is capable of being stored and/or transported for a period of time without significant loss of antimicrobial activity.

28. The elastomeric article of claim 27, wherein the elastomeric article is a glove.

29. The glove of claim 28, wherein the at least one antimicrobial agent comprises at least one chlorhexidine salt and at least one quaternary ammonium halide.

30. The glove of claim 28, wherein the period of time is at least 45 days.

31. The glove of claim 28, wherein the antimicrobial activity of the glove after storage for 45 days exhibits at least 1 log₁₀ reduction of the initial number of microorganisms that come into contact with the treated glove surface in one minute of contact.

32. The glove of claim 28, wherein the glove is essentially free of starch and powder.

33. The glove of claim 28, wherein the means for reducing the relative humidity in the vicinity of the glove is a moisture-resistant barrier container or metal foil pouch with a desiccant.

34. The glove of claim 29, wherein at least one chlorhexidine salt is chlorhexidine gluconate and at least one quaternary ammonium halide is benzalkonium chloride and/or cetyl pyridinium chloride.

35. An antimicrobial glove and packaging system comprising an elastomeric glove, an antimicrobial agent, and a water-vapor-impermeable package.

36. The system of claim 35, wherein the antimicrobial agent comprises at least one chlorhexidine salt and at least one quaternary ammonium halide.

37. The system of claim 36, wherein at least one chlorhexidine salt is chlorhexidine gluconate and at least one quaternary ammonium halide is benzalkonium chloride and/or cetyl pyridinium chloride.

38. The system of claim 35, wherein the water-vapor-impermeable package comprises a moisture-resistant barrier container or metal foil pouch with a desiccant and/or an inert water-vapor free atmosphere.

39. The system of claim 38, wherein the atmosphere in the water-vapor-impermeable package contains less than 10% water vapor by weight.

40. The system of claim 39, wherein the atmosphere in the water-vapor-impermeable package contains less than 5% water vapor by weight.

41. The system of claim 40, wherein the atmosphere in the water-vapor-impermeable package contains less than 1% water vapor by weight.

42. The system of claim 35, wherein the glove is essentially free of starch and/or powder.